AH
CONT.

buffer and desalted through a Bond-Elut C18 column (1 g). 4.6 OD was obtained. The product was analyzed by negative ion mass spectrometry, which showed the calculated mass (calc. 3934, found 3931).

REMARKS

By this Response, the specification is amended at paragraphs 88, 90, 92, and 94 to correct an obvious spelling mistake in "thymine". No new matter is added to the application by correcting this obvious error. Currently, claims 1-81 are pending in this application. The claims have been subject to a Restriction Requirement, as detailed below.

I. *Restriction Requirement*

In a Restriction Requirement dated September 17, 2002, the Office required restriction under 35 U.S.C. § 121 between the claims of Group I (claims 1-25, 30-32, and 40-80), the claims of Group II (claims 26-29), and the claims of Group III (claims 33-39 and 81). Applicants provisionally elect to prosecute Group I, claims 1-25, 30-32, and 40-80, drawn to a phosphorylated polyamide nucleic acid structure, *with* traverse.

It is respectfully submitted that the subject matter of all of claims 1-81 is sufficiently related that a thorough search of the subject matter of any one group of claims would encompass a search for the subject matter of the remaining claims. In particular, because the claims of Group I are related to those of Groups II and III as products (Group I) and methods of using (Group II) and methods of making (Group III) them, a thorough search of the products of Group I would necessarily encompass a search for methods of making and methods of using the products

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

of Groups II and III, respectively. Thus, a search and examination of the non-elected claims with the claims of Group I would not place a serious additional burden on the Examiner.

MPEP § 803 states that "if the search and examination of the entire application can be made without serious burden, the examiner must examine it on the merits" (emphasis added herein by Applicants). It is respectfully submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to Applicants and duplicative examination by the Patent Office.

In view of the above remarks, Applicants respectfully request withdrawal of the Restriction Requirement. In the event that the Office does not withdraw the Restriction Requirement, Applicants reserve the right to prosecute the non-elected claims in divisional or continuation applications.

Further, if the Office does not find Applicants' comments convincing, Applicants respectfully submit that the non-elected method claims of Groups II and III should be rejoined with the product claims of Group I once one or more product claims are found to be allowable. In response to *In re Ochiai* and *In re Brouwer,* the Commissioner set forth guidelines for treatment of non-elected process claims. See the Official Gazette, 1184 OG 88 (March 26, 1996). These guidelines have been incorporated into MPEP § 821.04. Under these PTO guidelines, "rejoinder practice" applies to Applicants who have elected claims to a product over claims to a process in compliance with a Restriction Requirement. When it is established that a product claim is allowable, withdrawn process claims that depend from, or otherwise include all the limitations of, the allowable product claim must be rejoined. Applicants respectfully submit that this procedure applies to the present claims.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

II. *Election of Species Requirement*

In an Election of Species Requirement issued by the Office with the Restriction Requirement, the Office requires Applicants to elect a single chemical species for initial examination in this application. In response, Applicants elect the polyamide nucleic acid disclosed in Example 7 as PNA 6, *with* traverse. The elected PNA is represented by the following text formula: C16-p-t(oeg) at tcc gtc at-aminohexyl-p-fluorescein. The elected PNA is represented by the chemical formula attached to this Response.

As with the requirement for restriction, Applicants respectfully submit that examination of the entire scope of the elected claims would not be a serious burden on the Examiner because all of the species encompassed by the claims are chemically related and thus could be examined by consulting the same class and subclass in the PTO archives. For at least this reason, Applicants request reconsideration and withdrawal of the Election of Species Requirement.

If the Office chooses, however, to maintain the Election of Species Requirement, Applicants expect that the Office, if the elected species is found allowable, to continue to examine the full scope of the claims to the extent necessary to determine the patentability of these pending claims. That is, Applicants request that, upon indication of allowable subject matter, the Office extend the search to a reasonable number of non-elected species, as is the duty according to M.P.E.P. § 803.02 and 35 U.S.C. § 121.

III. *Conclusion*

Early and favorable examination is requested. If the Office believes anything further is necessary in order to place this application in condition for allowance, Applicants request that

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

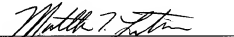
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

their undersigned representatives be contacted at the telephone numbers or e-mail addresses provided below.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

By: 

Matthew T. Latimer
Reg. No. 44,204
(571) 203-2714
matthew.latimer@finnegan.com

David S. Forman
Reg. No. 33,694
david.forman@finnegan.com

Date: February 19, 2003

Attachments:
Appendix
Chemical formula of PNA 6 (4 pages)

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

APPENDIX
(accompanying Response of February 19, 2003)

09/835,371

IN THE SPECIFICATION:

Please amend paragraphs 88, 90, 92, and 94 as follows:

[088] The preparation was effected, in a 1 μmol synthesis, in an analogous manner to that described in Example 2. However, after the carboxy terminus and the PNA moiety had been synthesized, a hydroxyethylglycine-based building block having [thiamine] thymine as the nucleobase (oegT) was coupled on in the last cycle. After the Dmt group was eliminated, the free hydroxyl function was coupled to the amino modifier C6 phosphoramidite 13 (Figure 4d) using tetrazole as catalyst and subsequently oxidized with iodine water. The oligomer was cleaved from the support, and all the base-labile protecting groups were removed at the same time, by treating with conc. ammonia at 50°C. The terminal Mmt protecting group was then removed by treating with 80% acetic acid. 130 OD of the crude product was obtained, with this group product being purified by gel electrophoresis. 22.5 OD of product, having a molecular weight of 3303.8 (calc. 3305.0), was obtained.

[090] The preparation was effected, in a 0.5 μmol synthesis, in an analogous manner to that described in Example 2. However, after synthesizing the carboxy terminus and the PNA moiety, a hydroxyethylglycine-based building block having [thiamine] thymine as the nucleobase (oegT) was coupled on in the last cycle. After eliminating the Dmt group, the free hydroxyl function was coupled to the biotin phosphoramidite 5 (Figure 4b) using tetrazole as catalyst and

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

subsequently oxidized with iodine water and detritylated with trichloroacetic acid. The oligomer was cleaved from the support, and all the protecting groups were removed at the same time, by treating with conc. ammonia at 50°C. 37 OD of the crude product was obtained, with this crude product being purified by gel electrophoresis. 22.5 OD was obtained.

[092] The synthesis was effected in analogy with Example 2 proceeding from the fluorescein-support 3 (Figure 6a and 8). The Dmt protecting group was eliminated from the fluorescein-support 3 by treating with 3% trichloroacetic acid. The free hydroxyl function was then reacted with the amino modifier C6 phosphoramidite 13 (4d) using tetrazole as catalyst. After condensation had taken place, oxidation was effected using an iodine solution (0.05 M in tetrahydrofuran/water, pyridine (7:2:1; v:v:v)). After that, the PNA moiety was prepared by solid phase synthesis as described in Example 1. A hydroxyethylglycine-based building block having [thiamine] thymine as nucleobase ((t)oeg) was coupled on in the last cycle. After eliminating the Dmt group, the free hydroxyl function was coupled to the phosphorylating reagent 1 (Figure 4a) using tetrazole as catalyst and subsequently oxidized with iodine water. Finally, the PNA was cleaved from the support, and the protecting groups were removed at the same time, by treating with conc. ammonia at 50°C overnight. 61 OD (260) of the crude product was obtained, with this crude product being purified by preparative polyacrylamide (PAA) gel electrophoresis. The desired product band was eluted with 0.2M triethylammonium bicarbonate buffer and desalted through a Bond-Elut C18 column (1 g). 5.6 OD was obtained. The product was analyzed by negative ion mass spectroscopy, which showed the calculated mass (calc. 3709.5; found 3706.3).

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

[094] The synthesis was effected in analogy with Example 6 starting from 1 μmol of fluorescein support 3 (Figures 6a and 8). A hydroxyethylglycine-based building block having [thiamine] thymine as the nucleobase ((t)oeg) was coupled on in the last cycle. However, after eliminating the Dmt group, the free hydroxyl function was coupled to the C16 phosphorylating reagent 7 (Figure 4c) using tetrazole as catalyst and subsequently oxidized with iodine water. Finally, the PNA was eliminated from the support, and the protecting groups were removed at the same time, by treating with conc. ammonia at 50°C overnight. 61 OD (260) of the desired crude product was obtained, with this crude product being purified by preparative polyacrylamide (PAA) gel electrophoresis. The desired product band was eluted with 0.2M triethylammonium bicarbonate buffer and desalted through a Bond-Elut C18 column (1 g). 4.6 OD was obtained. The product was analyzed by negative ion mass spectrometry, which showed the calculated mass (calc. 3934, found 3931).

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com